

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical coherence tomography system comprising:

[[ -]] an optical source to emit an optical beam;

[[ -]] a sample space;

[[ -]] a photodetector;

[[ -]] an interferometer set-up including

[[ -]] a reference reflector, and

[[ -]] a beam splitter-combination arrangement to

[[ -]] split the optical beam into a reference beam to the reference reflector and a sample beam to the sample space, and to

[[ -]] combine a reflected beam from the reference reflector with a returning beam from the sample space on-to form a combined beam, and provide the combined beam to a first

port of the photodetector, and  
a further beam splitter configured to receive part of a  
radiation from the beam splitter-combination arrangement and to  
couple out an output beam to a second port of the photodetector;

wherein

[[ -]] the optical source has an emission wavelength in the range of 1.6 $\mu$ m to 2.0 $\mu$ m, associated with a transition between an upper energy level and a lower energy level, and

[[ -]] the optical source comprises an excitation system which generates stimulated emission from a pump level to the upper energy level.

2. (Currently Amended) An The optical coherence tomography system as claimed in Claim 1, wherein the optical source includes a Tm-doped fiber placed in an optical cavity of cavity reflectors facing one another.

3. (Currently Amended) An The optical coherence tomography system as claimed in Claim 2, wherein the cavity reflectors are anti-reflex coated for a wavelength range of 760nm to 810nm.

4. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 2, wherein the cavity reflectors have a high-reflectivity for the wavelength range  $2.2\mu\text{m}$  to  $2.4\mu\text{m}$ .

5. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 2, wherein the cavity reflectors have a high-reflectivity for the wavelength range  $2.2\mu\text{m}$  to  $2.4\mu\text{m}$  and/or for the wavelength range  $1.40\mu\text{m}$  to  $1.5\mu\text{m}$ .

6. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 2, wherein the optical cavity has reflectivities less than 0.04 for the wavelength range of  $1.6\text{-}2.0\mu\text{m}$ .

7. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 6, wherein  
[[-]] an input cavity reflector has a high reflectivity  
(coating) for the wavelength range  $1.6\mu\text{m}$  to  $2.0\mu\text{m}$ ; and  
[[-]] an output cavity reflector has a low-reflectivity

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(coating) for the wavelength range  $1.6\mu\text{m}$  to  $2.0\mu\text{m}$ .

Claims 8-9 (Canceled)